CA

9

PROCESSES AND PROPERTIES INDEX

Dehydration of molding sand. P. P. Berg. *Repts. Central Inst. Metals,* Leningrad No. **10**, 140-50 (in German 150) (1934). A method is suggested for testing molding sand in regard to its behavior in operation. Two samples of sand, each weighing 10 g., were heated in crucibles for 2 hrs., one at 300° and the other at 700°. The samples were then weighed, covered with H_2O and let stand for 24 hrs. After drying at 105-110°, they were again weighed. If W_{300} and W_{700} are designated as losses in wt. due to dehydration on heating at 300-700°, and W'_{300} and W'_{700} as gain in wt. due to moisture absorption after contact with H_2O and drying at 105-110°, of the 2 samples, the expression for behavior of the sand as a molding material is $[(W_{300} + W_{700}) - (W'_{300} + W'_{700})] \times 100/2M$, where M is the original moisture content of the sand. S. L. M.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION eo

PROCESSES AND PROPERTIES INDEX

7

E. H.

Cast iron for abrasers. P. P. Berg and A. S. Mikeladze. *Repts. Central Inst. Metals* (Leningrad) No. 16, 135-6 (in German 157)(1934).—Specifications based on exptl tests are given for cast iron used in making abrasion plates for steel-mill rollers. These abrasers are made by pressing emery into the surface of the iron plate. The graphite should not be in the form of closed contours, but preferably in the form of sep. crystals well distributed. Two cryst. structures are recommended: pearlite having a Brinell hardness of 170 and ferrite having the same hardness, but alloyed with Cr. Limits of impurities: 0.10 S, 0.5-0.7 Mn and 0.1-0.2% P. If the inclusions are fine and uniformly distributed, permissible P is up to 0.8%.

S. L. Madorsky

A S M - S L A METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

Ca

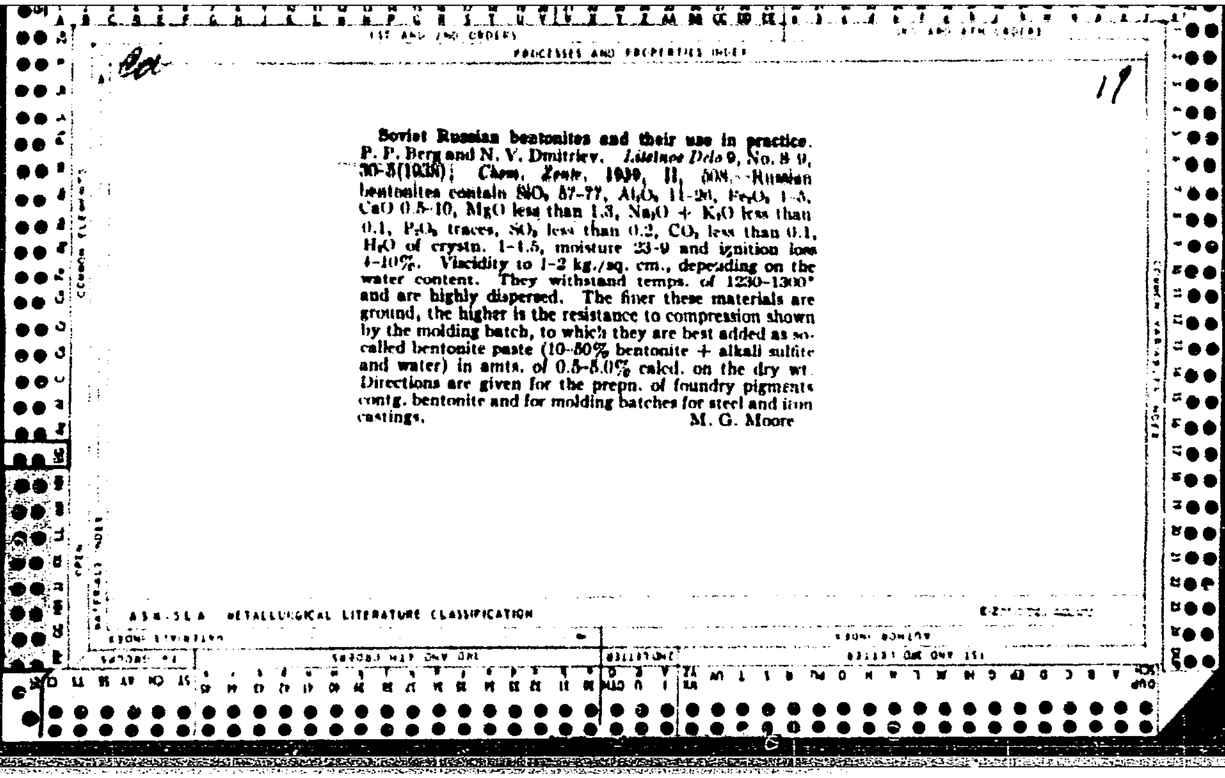
9

Calculation of molding-sand composition. P. Berg and O. Kolacheva. *Liteinoe Delo* 8, No. 7, 28-31(1937); *Met. Abstracts* (in *Metals & Alloys*) 9, 221. The degree of dehydration of the clay component of molding sand can be expressed as follows: $a_{[illegible]} = (\Delta S_c (1 - a) + k$ where S_c is clay content; Δ, coeff. of dehydration; k, dust content of fresh sand; a, amt. of used sand. This was obtained on the basis of an extensive math. calcn. Checking in production practice indicated that the formula is correct within 0.5%.

G. G.

Ingot molds [illegible]

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION


1ST AND 2ND ORDERS
PROCESSES AND PROPERTIES INDEX
11
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

Soviet Russian bentonites and their use in practice. P. P. Berg and N. V. Dmitriev. *Liteinoe Delo* 9, No. 8 9, 30-3(1938); *Chem. Zentr.* 1939, II, 508.—Russian bentonites contain SiO_2 57-77, Al_2O_3 11-20, Fe_2O_3 1-5, CaO 0.5-10, MgO less than 1.3, $Na_2O + K_2O$ less than 0.1, P_2O_5 traces, SO_3 less than 0.2, CO_2 less than 0.1, H_2O of crystn. 1-1.5, moisture 23-9 and ignition loss 4-10%. Viscidity to 1-2 kg./sq. cm., depending on the water content. They withstand temps. of 1230-1300° and are highly dispersed. The finer these materials are ground, the higher is the resistance to compression shown by the molding batch, to which they are best added as so-called bentonite paste (10-50% bentonite + alkali sulfite and water) in amts. of 0.5-5.0% calcd. on the dry wt. Directions are given for the prepn. of foundry pigments contg. bentonite and for molding batches for steel and iron castings.

M. G. Moore

BERG, F. P. and L. I. SEREBRIER.

Primenenie vagranok s neskol'kimi riadami furm. (Vestn. Mash., 1950, no. 3, p. 27-29)

Using cupola furnaces with several rows of tuveres.

DLC: TN4.V4

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

BERG, P. P., PROF

PA 197T72

USSR/Metals - Foundry, Processes Aug 51

"Simplified Methods for Technological Calculation of Thermal Processes in Casting Production," Prof P. P. Berg, Dr Tech Sci, Moscow Highway Inst

"Litey Proiz" No 8, pp 13-15

Attempts to develop formulas which, expressing the phys nature of thermal processes, are simple enough to be used practically. This simplicity is attained by accepting certain simplifying assumptions and introducing coeffs obtained experimentally.

197T72

USSR/Metallurgy - Steel, Casting, Properties Jun 52

"The Strength of Steel During the Cooling of a Casting in a Sand Mold," Prof P. P. Berg, Dr Tech Sci, V. N. Savevko, Cand Tech Sci

"Litey Proizvod" No 6, pp 14-16

Emphasizing importance of knowledge of steel strength in cooling process for development of technological method for fabrication of castings, presents data which, for the 1st time, permit evaluation of strength of cast carbon steel in

230T39

initial period of solidification and cooling of castings. Deduces eqs for detg conditional tensile strength of steel at various moments of cooling process.

230T39

BERG, P. P., PROF

1. BERG, P.P.

2. USSR (600)

4. Founding - Accounting

7. More about the heat caculations in foundry practice. Lit. proiz. no. 10, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

BERG, P.P.

USSR/Miscellaneous

Card 1/1 : Pub. 61 - 11/23

Authors : Berg, [illegible], and Saveyko, V. M.

Title : Linear shrinkage of steel castings

Periodical : Lit. proizv. 3, 24-26, May-June 1954

Abstract : Mathematical formulas for the determination of linear shrinkage, free shrinkage, intricate shrinkage, maximum [illegible] [illegible] metric [illegible] steel castings, are presented. [illegible] applied, are included. [illegible] references.

Institution : ...

Submitted : ...

AVRASIN, Ya.D., kandidat tekhnicheskikh nauk; BERG, P.P., professor, doktor tekhnicheskikh nauk, BERNSHTEYN, M.L., kandidat tekhnicheskikh nauk; GEMMEROZOV, P.A., starshiy nauchnyy sotrudnik; GLIMER, B.M., inzhener; DAVIDOVSKAYA, Ye.A., kandidat tekhnicheskikh nauk; YELCHIN, P.M., inzhener; YEREMIN, N.I., kandidat fiziko-matematicheskikh nauk; IVANOV, D.P., kandidat tekhnicheskikh nauk; MOROZ, L.I., inzhener; KOBRIN, M.M., kandidat tekhnicheskikh nauk; KORITSKIY, V.G., dotsent; KROTKOV, D.V., inzhener; KUDRYAVTSEV, I.V., professor, doktor tekhnicheskikh nauk; KULIKOV, I.V., kandidat tekhnicheskikh nauk; LEPETOV, V.A., kandidat tekhnicheskikh nauk; LIKINA, A.F., inzhener; MATVEYEV, A.S., kandidat tekhnicheskikh nauk; MIL'MAN, B.S., kandidat tekhnicheskikh nauk; PAVLUSHKIN, N.M., kandidat tekhnicheskikh nauk; PTITSYN, V.I., inzhener [deceased]; RAKOVSKIY, V.S., kandidat tekhnicheskikh nauk, RAKHSHTADT, A.G., kandidat tekhnicheskikh nauk; RYABCHENKOV, A.V., professor, doktor khimicheskikh nauk; SIGOIAYEV, S.Ya., kandidat tekhnicheskikh nauk; SMIRYAGIN, A.P., kandidat tekhnicheskikh nauk, SUL'KIN, A.G., inzhener; TUTOV, I.Ye., kandidat tekhnicheskikh nauk, KHRUSHCHOV, M.M., professor, doktor tekhnicheskikh nauk; TSYPIN, I.O., kandidat tekhnicheskikh nauk; SHAROV, M.Ya., inzhener; SHERMAN, Ya.I., dotsent; SHMELEV, B.A., kandidat tekhnicheskikh nauk; YUGANOVA, S.A., kandidat fiziko-matematicheskikh nauk; SATEL', E.A., doktor tekhnicheskikh nauk, redaktor; SOKOLOVA, T.F., tekhnicheskiy redaktor

[Machine builder's reference book] Spravochnik mashinostroitelia: v shesti tomakh. izd-vo mashinostroit. lit-ry. Vol.6. (Glav. red.toma E.A.Satel'. Izd. 2-oe, ispr. i dop.) 1956. 500 p. (MLRA 9:8)
(Machinery--Construction)

SOV/137-57-1-697

On the Problem of the Thermal Analysis of Casting Molds

conditions: m_1 in the process of cooling of C's in metallic molds at temperatures ranging from the end of the solidification stage to the point of eutectoid transformation (the reduced thickness of the C must not exceed 1 cm) and m_2 and m_3 in the process of cooling of C's in non-metallic molds with identical temperature limits; the reduced thickness of the C is ≤ 2 cm in the case of m_2 and > 2 cm in the case of m_3.

Ya. M.

Card 2/2

BERG, P.P., professor, doktor tekhnicheskikh nauk; STUDNITS, M.A., inzhener;
FEYGEL'SON, B.Yu., kandidat tekhnicheskikh nauk.

Use of radioactive isotopes to study the mechanics of the formation of inclusions in castings. Lit.proizv.no.7:18-19 Jl '56.(MLRA 9:9)
(Radioisotopes--Industrial applications) (Founding)

БЕРГ П.П.

BERG, P.P.

Formulas substantiated by physical laws and with empirical coefficients. Lit.proizv.no.12:11-12 D '57. (MIRA 11:1)
(Founding)

BERG, Petr Petrovich; RYZHKOV, A.A., doktor tekhnicheskikh nauk, professor, retsenzent; PASTERNAK, N.A., kandidat tekhnicheskikh nauk, redaktor; MODEL', B.I., tekhnicheskiy redaktor; EL'KIND, V.D., tekhnicheskiy redaktor

[Testing the quality of castings] Proverka kachestva otlivok. Izd. 2-oe. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit. lit-ry, 1957. 234 p. (MIRA 10:10)

(Founding--Quality control)

Berg, P.P.

137-1957-12-23797

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 12, p 134 (USSR)

AUTHOR: Berg, P. P.

TITLE: Avenues of Development in the Foundry Industry (Puti razvitiya liteynogo proizvodstva)

PERIODICAL: V sb.: Novoye v liteyn. proiz-ve. Nr 2, Gor'kiy, Knigoizdat, 1957, pp 5-10

ABSTRACT: The importance of uniformity in the properties of the base materials is emphasized. The processes are considered from the point of view of maximum controllability and of the closest possible approach of the casting to the final product. Examples of automation of individual processes are given.

S. Sh.

1. Castings-Production 2. Castings-Control 3. Castings-Equipment-Automation

Card 1/1

BERG, PP

PHASE I BOOK EXPLOITATION 549

Nauchno-tekhnicheskoye obshchestvo mashinostroitel'noy promyshlennosti. Liteynaya sektsiya

Uluchsheniye kachestva stal'nykh otlivok; trudy Vsesoyuznogo soveshchaniya (Improving the Quality of Steel Castings; Transaction of the All-Union Conference) Moscow, Mashgiz, 1958. 214 p. 4,500 copies printed.

Eds.: Klauzen, A.I., Engineer; and Silayev, A.F., Candidate of Technical Sciences. Ed. of Publishing House: Manakin, N.V.; Tech. Ed.: Shigin, S.T.; Managing Ed. for literature on heavy machine building (Mashgiz): Golovin, S.Ya.

PURPOSE: This book is intended for engineers, technicians, and scientific workers at research institutes and plants, as well as for students at advanced technical schools.

COVERAGE: The book is a collection of papers presented at a scientific and technical conference on the improvement of the quality of steel

Card 1/12

materials and equipment. He points out that the USSR lags behind the USA in mechanization and automation of casting processes. He recommends the speedy adoption of modern, efficient technological methods and, above all, an intensification of research in casting methods.

Berg, P.P., Professor, Doctor of Technical Sciences. Effect of Mold Material on the Quality of Castings 11

The author discusses gas cavities, hot cracks, dimensional accuracy, pick-up, surface quality, and surface alloying in connection with the nature of the mold material.

Borovskiy, Yu. F., Engineer; Gulyayev, B.B., Professor, Doctor of Technical Sciences, Increasing the Surface Smoothness of Castings 19

Improving the Quality of Steel Castings (Cont.) 549

For cheaply producing smooth-surface castings, the authors recommend the use of two-layer pressed molds or bakelite-bonded shell molds, the supporting layer being made of cheaper, coarser material.

Mylko, S.N., Docent, Candidate of Technical Sciences. Effect of the Oxidizing Capacity of the Bath on the Quality of Steel 23

The authors conclude from experimental data that in making carbon steel for shaped castings without preliminary deoxidation, better mechanical properties are obtained by oxidizing a large proportion of the manganese in the bath, which results in a better distribution of oxide and sulfide inclusions.

In'shakov, N.N., Candidate of Technical Sciences. Comparative Evaluation of the Mechanical Properties of Open-hearth, Bessemer, and Electric Steel 32

The author's investigations lead him to the following conclusions, among others: 1. Acid electric steel, made by the silicon-reduction process,has, in addition to higher ultimate strength, better plastic

Card 4/12

properties — elongation and reduction in area— than basic open-hearth steel. Bessemer steel, with an ultimate strength close to that of basic open-hearth steel, shows less elongation and reduction in area, and these properties vary considerably in individual cases. 2. Increasing the carbon content leads in all cases to an increase in ultimate strength and a decrease in elongation and reduction in area; this effect of carbon is greater in electric steel than in Bessemer steel. 3. In acid electric steel, as compared with open-hearth steel, an increase in the manganese content has a more marked effect in increasing the ultimate strength and yield point and a less pronounced effect in decreasing elongation and reduction in area. Increasing the manganese content in Bessemer steel has a less adverse effect on the plastic properties than in basic open-hearth steel. 4. The common view of Bessemer steel as being necessarily inferior to basic open-hearth steel in its mechanical properties ought to be revised. 5. Acid electric steel is characterized by greater cold shortness than basic open-hearth steel. 6. As regards endurance, there is little difference among the steels investigated.

Improving the Quality of Steel Castings (Cont.) 549

Nestertsev, S.P., Candidate of Technical Sciences. Casting Properties of Heat-resistant Austenitic Steel 75

The author's investigation shows, among other things, that molten LA-1 heat-resistant steel possesses greater flowability than the widely-used 30L carbon steel, and that the basic factor determining flowability of LA-1 steel is temperature of the metal during pouring.

Ivanyushin, Ye. P., Engineer; Kulikova, K.N. Selection of Optimum Heat-treating Conditions 86

The following are investigated for their effect on the mechanical properties and microstructure of steel castings: 1) low-temperature annealing and normalization 2) higher-temperature annealing and normalization, with holding at temperature for various periods of time 3) rate of cooling. In addition, the effect of heat-treating conditions on the plastic properties of steel is studied.

Card 7/12

Improving the Quality of Steel Castings (Cont.) 549

The authors discuss methods of preventing hot cracks in castings caused primarily by clinging of the sand mold to the casting as the latter shrinks and by unsatisfactory mechanical properties of the steel at the crystallization temperature. It is recommended that the mold be designed so as to lessen its grip on the casting during shrinkage. This may be accomplished by making the mold more flexible, by maintaining definite distances between flask ribs and projecting parts of the casting, etc. The casting may be strengthened during the solidification period by the use of external coolers and by keeping the sulfur content of the casting below 0.045 percent.

Levando, V.V., Engineer; Kryanin, I.R., Candidate of Technical Sciences.
Structure and Properties of the Metal of Large Castings 133

The authors investigate 20GSL low-alloy manganese-silicon steel as a material for casting massive turbine blades. Such a blade was cast and analyzed to determine the degree of chemical homogeneity and also the macrostructure, microstructure, mechanical properties, and hardness of various sections of the blade. It was found that this

Card 9/12

steel is very well suited for the casting of many types of machine parts where high strength and good plastic properties are required, and also for turbine blades, provided the blade is surfaced with stainless steel to assure cavitation stability.

Gulyayev, B.B., Professor, Doctor of Technical Sciences; Postnov, L.M., Engineer; Zotov, M.V., Engineer. Shrinkage Porosity and Means of Dealing With It. 143

Various types of porosity are discussed, methods of detecting them are explained, and measures for preventing porosity are described.

Some measures involve changes in design, while others are accomplished by improved techniques.

Postnov, L.M. The Effect of Fillet Radii on the Formation of Defects in Junctions 158 principal technological improvements thereby necessitated: 1) more precise geometry of castings 2) improved quality of the cast surface 3) a reduction in the number of internal defects discovered in machining 4) more rapid methods of producing castings.

Petran', K.V., Candidate of Technical Sciences. Correction of Defects by Welding 187

The author shows that this method is entirely satisfactory, provided proper materials and techniques are employed. Procedural details are given for the preparation of the defective items for welding and for the actual process of welding-up the defects.

Suslov, V.N., Candidate of Technical Sciences. Automatic Welding-up of Defects in Steel Castings 200

Of several possible methods for the automatic welding-up of casting defects, the author considers arc welding in an atmosphere of carbon dioxide the most promising. There are 6 references, all Soviet.

AVAILABLE: Library of Congress

GO/ksv
9-15-58

BERG P.P.

PHASE I BOOK EXPLOITATION 1216

Soveshchaniye po teorii liteynykh protsessov. 2d, Moscow, 1956

Zatverdevaniye metallov; trudy soveshchaniya... (Solidification of Metals; Transactions of the Second Conference on the Theory of Foundry Processes) Moscow, Mashgiz, 1958. 532 p. 3,500 copies printed.

Sponsoring Agencies: AN SSSR. Institut mashinovedeniya. Komissiya po tekhnologii mashinostroyeniya; and AN SSSR. Institut metallurgii.

Ed. (Title page): Gulyayev, B.B., Doctor of Technical Sciences, Professor; Ed. (Inside book): Novikov, P.G., Candidate of Technical Sciences; Ed. of Publishing House: Chernysheva, N.P.; Tech. Ed.: Uvarova, A.F.; Managing Ed. for Literature on Heavy Machine Building: Golovin, S.Ya., Engineer.

PURPOSE: This book is intended for a wide circle of engineers, technicians, and scientists working in the fields of general metallurgy, physical metallurgy, and the production of castings.

Card 1/~~8~~
3

Solidification of Metals (Cont.) 1216

COVERAGE: The book is a collection of 29 papers concerned with the determination of fixed patterns of metal solidification and also with the determination of favorable conditions for the production of sound castings. The authors discuss heat phenomena in metallic and sand molds, properties of mold materials, conditions of solidification of castings in shell molds, kinetics of the warming-up of porous bodies (molds), effect of alloy composition on the solidification process, conditions for the development of a zonal structure and of chemical heterogeneity of castings, and other matters of current interest. There are also discussions of the use of model testing and radioactive isotopes for studying solidification. No personalities are mentioned.

TABLE OF CONTENTS:

Preface 3

Gulyayev, B.B., Doctor of Technical Sciences, Professor. Present State of Investigations of Metal-solidification Processes 5

Card 2/8
3

Solidification of Metals (Cont.) 1216

I. HEAT-TRANSFER PROCESSES IN THE SOLIDIFICATION OF CASTINGS

Berg, P.P. Principles for Constructing Production Formulas for Evaluating Heat Processes in the Casting Mold 33

Girshovich, N.G., Doctor of Technical Sciences, Professor; and Yu.A. Mekhendzi, Doctor of Technical Sciences, Professor. Solidification of Castings 39

Veynik, A.I., Doctor of Technical Sciences, Professor. Investigation of Heat Phenomena in Metallic Molds and Their Effect on Solidification Processes 91

Gulyayev, B.B., Doctor of Technical Sciences, Professor; and O.N. Magnitskiy, Engineer. Investigation of the Effect of Alloy Composition on the Kinetics of the Solidification of Castings 108

Skvortsov, A.A., Candidate of Technical Sciences, Docent. On the Solution of the Problem of the Solidification of Metals Within a Temperature Range 124

Card 3/~~8~~
3

BERG, P.P., doktor tekhn.nauk; BIDULYA, P.N., doktor tekhn.nauk; GRECHIN, V.P., kand.tekhn.nauk; DOVGALEVSKIY, Ya.M., kand.tekhn.nauk; ZHUKOV, A.A., inzh.; ZINOV'YEV, N.V., inzh.; KRYLOV, V.I., inzh.; KUDRYAVTSEV, I.V., doktor tekhn.nauk; LANDA, A.F., doktor tekhn.nauk; LEVI, L.I., kand.tekhn.nauk; MALAKHOVSKIY, G.V., inzh.; MIL'MAN, B.S., kand.tekhn.nauk; SOBOLEV, B.F., kand.tekhn.nauk [deceased]; SKOMOROKHOV, S.A., kand.tekhn.nauk; STEPIN, P.I., kand.tekhn.nauk; USHAKOV, A.D., kand.tekhn.nauk; FRIDMAN, L.M., inzh.; KHRAPKOVSKIY, E.Ya., inzh.; TSYPIN, I.O., kand.tekhn.nauk; SHKOL'NIKOV, E.M., kand.tekhn.nauk; POGODIN-ALEKSEYEV, G.I., prof., doktor tekhn.nauk, red.; BOLKHOVITINOV, N.F., prof., doktor tekhn.nauk, red.toma; LANDA, A.F., prof., doktor tekhn.nauk, red.toma; RYBAKOVA, V.I., inzh., red.izd-va; SOKOLOVA, T.F., tekhn.red.

[Handbook on materials used in the machinery industry] Spravochnik po mashinostroitel'nym materialam; v chetyrekh tomakh. Pod red. G.I.Pogodina-Alekseeva. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry. Vol.3. [Cast iron] Chugun. Red.toma N.F.Bolkhovitov i A.F.Landa. 1959. 359 p. (MIRA 13:1)
(Machinery industry) (Cast iron)

БЕРГ П. П.

18(0) P-2

SOV/128-59-8-27/29

AUTHOR: Averbukh, N.M.

TITLE: Leningrad Regional Conference on Progressive Foundry Practice

PERIODICAL: Liteynoye proizvodstvo, 1959, Nr 8, pp 46 - 48 (USSR)

ABSTRACT: December 8 - 12, 1959 a conference was held in Leningrad in order to exchange views on progressive foundry practice. About 700 persons participated. G.V. Malakhovskiy, the chief metallurgist of the Leningrad gradskiy Sovnarkhoz, gave a general picture of the foundry industry in the Leningrad economic region. M.M. Vyshemirskiy, the chief metallurgist of the Leningrad "Stankolit" plant, spoke about progressive methods in preparing cores and casting forms. M.A. Kremer, spoke on "New trends in the theory and practice of feeding castings". Yu.A. Nekhendzi reported on the 3rd Polish Foundry Conference. V.M. Sestopal described characteristics of Czech foundry processes. A.D. Goryachev (Kirov plant in Leningrad) described a new 200 ton press machine. I.A. Gerasimov (Kremenchug) reported on precision stamp casting

Card 1/5

SOV/128-59-3-27/29

Leningrad Regional Conference on Progressive Foundry Practice

in his factory. S.S. Yelistratov (Stalingrad) described a vacuum machine for feeding cores. I.T. Fedorova described a new drying process used for drying cores. The lectures of M.A. Kremer, K.V. Tolstikhina, P.I. Pankin, and P.I. Shportenko concerned the problems of exothermic mixtures. N.A. Tolpegin (Kirov plant in Leningrad) spoke about steel castings. I.A. Shapranov and A.A. Get'man (Scientific Research Institute) reported on an economic casting method using iron with a magnesium content; further they described a cupola furnace with a two-step heating. Ya. I. Medvedev (TsNIITMASh) spoke about gas blisters in castings and methods of elimination. C.A. Kozin ("Krasnoye Sormovo" plant) spoke on the classification of casting spoilage in manganese steel.. P.P. Berg spoke on "New core materials". I.B. Kumanin (Steel Institute of Moscow) spoke about "Core materials and their influence upon castings". M.A. Kremer suggested the use of bitumin in sandblowing machines. I.V. Ryzhkov (Polytechnical Institute of Khar'kov) reported

Card 2/5

SOV/128-59-8-27/29

Leningrad Regional Conference on Progressive Foundry Practice

on grey iron castings. Prokhorov ("Krasnoye Sormovo" plant) spoke of using liquid glass in cores for V, Cr, Ni and Mo steel castings. I.V. Gruznykh (Polytechnical Institute in Leningrad) reported about optimum parameters for core-blowing of liquid-glass-cores. P.I. Shportenko said that in the Novokrematorsk plant the removal of liquid-glass-cores was regulated by a dosage of clay, saw dust and waterless colors. S.I. Chernysh gave examples of quick drying mixtures. K.I. Shanskiy (Leningrad Plant for Hoist Transportation Equipment) stated that cupola furnace slag can be used as quick drying mixtures. B.A. Noskov and A.F. Nasapkin (Politechnical Institute of Khar'kov) reported on using of betonite mixtures for cores. V.F. Kryuchkov (Leningrad Mechanical plant) and Ya. V. Zeleranskiy (Machine-Building plant) hold about the transportation of core mixtures. L.M. Mariyenbakh spoke on "Improvement of melting agregates and of melting processes" and proposed using earth-gases for air-warming-machines. P.F. Sabaneyev (Rostsel'mash) spoke about the intention of the

Card 3/5

SOV/128-59-8-27/29

Leningrad Regional Conference on Progressive Foundry Practice

plant to increase the output of grey iron. A constructive discussion took place after the theoretic lecture of B.A. Noskov and I.N. Den'gin (Politechnical Institute of Khar'kov) about the using of earth-gas in the furnace. Yu. G. Rozenberg and S.I. Tsukerman reported about the successful use of earth-gas in the furnaces of KhEMZ. L.N. Korchagina and R. I. Ketcheka discussed the use of such gas in the Rostov radiator plant and in the "Krasnyy Aksay " plant. On the subject of improved melting in Red China A.M. Petrishenko reported. I.I. Shapranova and E.V. Petrova (NII) informed on the modification of iron with magnesium under pressure. G.N. Golub spoke about using iron modified with magnesium in his plant . G.I. Koshovnik (Polytechnical Institute of Kiyev) reported on the homogenization of magnesium iron during annealing. M.Ya. Zaslavskiy spoke about the production of grey iron at the Nevskiy Ship Repair Plant. "Increasing the Quality of Castings from Non-Ferrous metals" was the lecture of A.F. Kolobnev and N.I. Belousov (NII) in which they gave the characteristics of the new aluminum alloys (AV 30,

Card 4/5

SOV/128-59-8-27/29

Leningrad Regional on Progressive Foundry Practice

AV 300, AMg7A a.o. I.P. Yegorenkov (NIILITMASh) mentioned in his lecture "Ways to Increase Labor Productivity during the cleaning and chopping of Castings", hydraulic methods of cleaning. V.L. Tarskiy (NIILITMASh) spoke about foreign equipment. M.A. Kremer informed on cleaning steel castings with a gas flame and air-arc method. V.M. Svirskiy mentioned the shortcomings of sand-blowing tools. M.Ya. Zaslavskiy (Lengiprorechtrans) introduced a simple hydro-sand-spurl machine. M.V. Bromley (All-Union Scientific Research Institute for Labor Protection VTzSPS) spoke on "Hygiene-Technical Requirements of the Plans and Building of Casting Shops". V.V. Kucheruk from the same institute raised the problem of labor protection during casting in shell-cores and when preparing the cores from the liquid-glass mixtures. O.A. Ratner (Leningrad Institute for Labor Medicine and Labor Hygiene) spoke about the prevention of silicosis. At the end decisions were taken to increase labor productivity.

Card 5/5

BERG, P.

The dimensional accuracy of castings. Tr. from the Russian. p.67

PRZEGLAD ODLEWNICTWA. (Stowarzsyzenie Techniczne Oldewnikow Polskich)
Krakow, Poland. Vol.9, no.3, Mar. 1959

Monthly List of East European Accessions Index (EEAI) LC, Vol. 8, No.66, June 1959
Uncl.

BERG, P.

Congress of foundry research workers. NTO no.12:58-59 D '59 (MIRA 13:3)

1. Predsedatel' liteynoy sektsii Nauchno-tekhnicheskogo obshchestva mashinostoitel'noy promyshlennosti; chlen delegatsii na 26-m kongresse liteyshchikov.
(Foundry research--Congresses)

PHASE I BOOK EXPLOITATION SOV/4199

Leningrad. Politekhnicheskiy institut

Sovremennyye dostizheniya liteynogo proizvodstva; trudy mezhvuzovskoy nauchno-tekhnicheskoy konferentsii (Recent Achievements in Founding: Transactions of the Scientific and Technical Conference of Schools of Higher Education) Moscow, Mashgiz, 1960. 335 p. Errata slip inserted. 4,000 copies printed.

Resp. Ed.: Yu. A. Nekhendzi, Doctor of Technical Sciences, Professor; Eds.: N. G. Girshovich, Doctor of Technical Sciences, Professor, and K. P. Lebedev, Docent; Managing Ed. for Literature on Heavy Machine Building (Leningrad Department, Mashgiz): Ye. P. Naumov, Engineer; Tech. Eds.: Ye. A. Dlugokanskaya, and L. V. Shchetinina.

PURPOSE: This book is intended for the technical personnel of foundries. It may be used by students of the field.

COVERAGE: This collection of articles discusses problems in founding processes. Individual articles treat the melting of metals and their alloys, mechanization and automation of casting processes, aspects of the manufacture of steel, cast iron, and nonferrous metal castings. No personalities are mentioned. References accompany individual articles.

Recent Achievements in Founding (Cont.) SOV/4199

18. Mariyenbakh, L. M. Investigation of New Types of Fuel for Cupolas 148

19. Goftman, M. V., and P. Ya. Nefedov. New Methods of Producing Cupola Coke 154

20. Goncharov, I. N. Utilization of the Steel and Cast Iron Chips in the Industry 159

21. Gruzin, V. G. Temperature Regime of the Pouring (at Casting) of Hydroturbine Blades 165

22. Bilyk, V. Ya. Laboratory Methods of Measuring the Temperature of Molten Metals 169

IV. PROBLEMS OF MOLD MAKING

23. Berg, P. P. Dimensional Accuracy of Castings 178

24. Obolentsev, F. D. Generation of Adhesion Forces Between the Nonmetallic Layer (Pick-Up) and the Casting 183

Card 5/9

⑤

Berg, P.P.

BERG, P.P.

PHASE I BOOK EXPLOITATION SOV/4666

Voprosy teorii liteynykh protsessov (Problems of the Theory of Founding Processes) Moscow, Mashgiz, 1960. 692 p. 4,500 copies printed.

Sponsoring Agencies: Liteynyye kafedry i otdely Instituta liteynogo proizvodstva AN USSR; Minskogo fiziko-tekhnicheskogo instituta AN BSSR; Moskovskogo avtodorozhnogo instituta; Moskovskogo avtomekhanicheskogo instituta; Moskovskogo vechernego mashinostroitel'nogo instituta; Instituta stali imeni Stalina; Ural'skogo politekhnicheskogo instituta imeni S. M. Kirova; Tsentral'nogo nauchno-issledovatel'skogo instituta tekhnologii i mashinostroyeniya.

Reviewers: A. A. Ryzhikov (Head, Department of Founding, Gor'kiy Politechnic Institute), A. Ye. Krivosheyev (Head, Department of Founding, Dnepropetrovsk Politechnic institute), and I. Přibyl (Head, Department of Founding, Higher School of Mining, Ostrava, Czechoslovakia); Editorial Board: P. I. Vasilevskiy, A. A. Zhukov, N. I. Klochnev, L. S. Konstantinov, and Ya. C. Polyakov;

~~Card 1/4~~

Problems of the Theory (Cont.) SOV/4666

TABLE OF CONTENTS:

Ch. I. Properties of Molding Materials (P. P. Berg) 5

Ch. II. Methods of Producing Molding Mixtures With Given Binding Properties (A. M. Lyass) 29

Ch. III. Theoretical Principles of Processes of Developing the Binding Strength of Mixtures With Water Glass (A. M. Lyass) 70

Ch. IV. Chemical Hardening of Molds and Cores [The CO_2-Process] (P. P. Berg, B. Yu. Feygel'son) 93

Ch. V. Gating Systems (B. V. Rabinovich) 110

Ch. VI. Principles of Calculating the Structure and Strength of Gray Iron (A. A. Zhukov) 163

Ch. VII. On the Theory of Melting Metals (L. I. Levi) 253

~~Card 3/4~~

BERG, P. P.

PHASE I BOOK EXPLOITATION SOV/5304

Soveshchaniye po teorii liteynykh protsessov. 5th, 1959

Tochnost' otlivok; trudy soveshchaniya (Accuracy of Castings; Transactions of the Fifth Conference on the Theory of Founding Processes) Moscow, Mashgiz, 1960. 206 p. 3,500 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut mashinovedeniya. Komissiya po tekhnologii mashinostroyeniya.

Ed. (Title page): B. B. Gulyayev, Doctor of Technical Sciences, Professor; Ed. of Publishing House: G. N. Soboleva; Tech. Ed.: A. F. Uvarova; Managing Ed. for Literature on Hot-Processed Metals: S. Ya. Golovin, Engineer.

PURPOSE: This book is intended for scientific and technical personnel at scientific research institutes, factories, and schools of higher education.

COVERAGE: The book contains 19 reports read at a conference on the accuracy of castings. The conference was organized by the

Card 1/~~7~~ 3

Accuracy of Castings (Cont.) SOV/5304

Berg, P. P. [Doctor of Technical Sciences, Professor]. Determining the Dimensional Accuracy of Castings 26

Vorob'yev, Yu. A. [Candidate of Technical Sciences]. Theoretical and Experimental Investigation of the Accuracy of Castings 29

SECTION II. TOLERANCES, ALLOWANCES, AND SURFACE ROUGHNESS OF CASTINGS 54

Yegorenkov, I. P. [Candidate of Technical Sciences]. System of Allowances for the Machining of Castings 54

Kopanevich, Ye. G. [Candidate of Technical Sciences]. Dimensional Tolerances of Cast Parts 62

Kazennov, S. A. [Candidate of Technical Sciences]. Tolerances of Nonferrous-Alloy Castings Made by Various Methods 67

Ivanov, M. P. [Engineer]. Investigating the Effect of

Card 3/7

3

GIRSHOVICH, Naum Grigor'yevich, prof., doktor tekhn.nauk, red.; BERG, P.P., prof., doktor tekhn.nauk, zasluzhennyy deyatel' nauki i tekhniki, retsenzent; BARANOV, I.A., inzh., red.; LEYKINA, T.L., red.izd-va; SPERANSKAYA, O.V., tekhn.red.; FRUMKIN, P.S., tekhn.red.

[Handbook on iron founding] Spravochnik po chugunnomu lit'iu. Izd.2., perer. i dop. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1960. 800 p. (MIRA 14:4)
(Iron founding--Handbooks, manuals, etc.)

BERG, P.P.; KHINCHIN, A.S.

Temperature dependence of thermophysical constants of a molding mixture. Inzh.-fiz. zhur. no.3:49-53 Mr '60. (MIRA 13:10)

1. Avtomobil'no-dorozhnyy institut i Institut liteynogo mashinostroyeniya i liteynoy tekhnologii, Moskva.
(Sand, Foundry--Thermal properties)

S/128/60/000/010/002/003
A133/A133

AUTHORS: Berg, P. P., Feygel'son, B. Yu.

TITLE: Metallic shell molds

PERIODICAL: Liteynoye proizvodstvo, no. 10, 1960, 32-33

TEXT: The authors together with Engineers G. T. Zasetskiy, V. G. Rakogon, Ye. I. Kuznetsov and Senior Technicians A. N. Skusureva and R. D. Ustichenko, have carried out investigations to study a number of technological factors connected with shell-mold casting and, particularly, the application of thin coatings of chemically solidifying mixtures with the object of making the best use of their advantages (Ref. B. V. Rabinovich, avt. svidl. No. 81745 of 13/XII-44). The investigations, concerning above all the effect of the thickness of the coating layer, were divided into several subgroups, viz. 1) The effect of the coating layer thickness on the maximum surface temperature of the metallic mold. Square molds of low-carbon steel were tested having outer dimensions 240 x 240 mm, while the inner hollow being filled with metal

Card 1/5

Metallic shell molds S/128/60/000/010/002/003
A133/A133

was 140 x 140 mm. The coating thickness of the mixture on a water glass base was varied from 0 to 30 mm. The mixture consisted of 100% 02A (PO2A) sand, 8% sodium water glass of 2.8 modulus and 1.48 specific gravity, the water content of the mixture being 4.5%. The tests showed that the temperature of the metallic mold surface decreases from about 800°C (if only a thin paint coat is applied) to 200°C at a thickness s of the coating layer of 30 mm. Fig. 2 shows a curve of the temperature drop Δ for 1 mm of coating thickness, attaining 100°C per 1 mm at a coat thickness of s = 5 mm, and decreasing to 10°C per 1 mm at a coat thickness exceeding 10 mm. Increasing the thickness of the coating layer over 20 mm does not lead to a considerable temperature drop on the metallic mold surface. 2) The effect of the coating layer thickness on the advance of the crystallization front. This was investigated by adding sulfur to the melt. Since it is impossible to determine the rate of sulfur diffusion, the results of these tests can only be considered as being relative. If the coating layer was increased from 0 to 20 mm, a marked decrease in the rate of growth of the thickness of

Card 2/5

Metallic shell molds S/128/60/000/010/002/003
A133/A133

the solidifying skin could be observed. A coat exceeding 20 mm in thickness did not result in a significant decrease of this rate. 3) The effect of the coating layer thickness on the depth of shrinkage cavities. During these tests steel was poured into the mold at 1,580°C. The test ingots weighed 23 kg and were cut along the long axis. The curve in fig. 5 shows the dependence of the depth of shrinkage cavities on the thickness of the coating. A marked effect on the depth of shrinkage cavities can be observed if the thickness of coating is increased up to 10 mm. It follows from all these tests that an increase of the coating thickness to more than 20 mm can only be justified by the technology of its application. 4) Developing application and solidification conditions of the coating layer. In developing a method for the application and solidification of the coating layer the fact is taken into account that particularly spherical sections of the mold are difficult to ram. The surface of the metallic mold should be heated to at least 200°C. The blowing of CO_2 should be effected from a gas chamber on the outer mobile mold wall to prevent the shell solidifying from the inner wall and not letting pass the gas. 5) Inves-

Card 3/5

Metallic shell molds

S128/60/000/010/002/003
A133/A133

tigating the technological parameters of the coating layer. Coats of 20, 40, 60, and 80 mm thickness were rammed into the mold by a sand blower at 1 atm pressure. A coat of 40 mm thickness showed only insignificant porosity. It was found that the higher the mold temperature the quicker the blowing process should take place to obtain an even and compact surface. Thus at mold temperatures of 80, 100, 150, and 200°C the blowing time should amount to 30, 25, 20, and 10 seconds respectively. The authors give a brief description of the sand blowing equipment and point out that special attention should be paid to the moisture content of the mixture. Optimum results have been obtained with a humidity of 5.0 - 5.5%.

There are 6 figures and 1 Soviet-bloc reference.

Card 4/5

Metallic shell molds

S/128/60/000/010/002/003
A133/A133

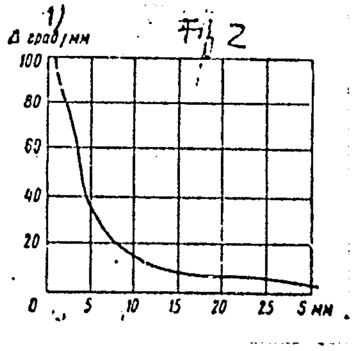


Fig. 2

1) Δ degree/mm

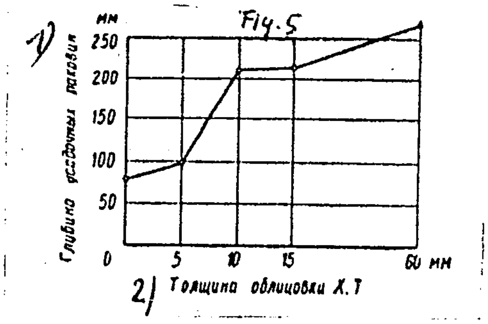


Fig. 5

1) depth of shrinkage cavities
2) coating thickness

Card 5/5

BERG, I. I.

"The Influence of the Mould on the Quality of the Casting"

report presented at the 7th Conference on the Interaction of the Casting Mould and the Casting, sponsored by the Inst. of Mechanical Engineering, Acad. Sci. USSR, 25-28 January 1961.

PISHCHEV, Vasiliy Mikhaylovich; BERG, P.P., zasl. deyatel' nauki i tekhniki, doktor tekhn. nauk, prof., retsenzent; IVANOV, D.P., doktor tekhn. nauk, retsenzent; MITIN, V.I., red.; KARASEV, A.I., tekhn. red.

[Ingot molds for the centrifugal casting of pipes] Izlozhnitsy dlia tsentrobezhnogo lit'ia trub. Moskva, Gos. nauchno-tekhn. izd-vo litry po chernoi i tsvetnoi metallurgii, 1961. 222 p. (MIRA 14:10)
(Centrifugal casting) (Ingot molds)

BERG, P.P.; MEDVEDEV, Ya.I.

Gas processes in the foundry mold. Lit.proizv. no.7:30-35 Jl '61. (MIRA 14:7)
(Gases in metals) (Foundries—Equipment and supplies)

BERG, P., inzh.

Stand for molding concrete insertion pieces. Stroitel' no.10:14, 16a-16d O '61. (MIRA 14:11)

(Precast concrete)

AKSENOV, Pavel Nikolayevich, doktor tekhn. nauk, prof.; BERG, P.P., doktor tekhn. nauk, prof., retsenzent; TIKHANOV, A.Ya., tekhn. red.

[Theory of founding machines] Nekotorye voprosy teorii mashin liteinogo proizvodstva. Moskva, Mashgiz, 1962. 231 p. (MIRA 15:7)
(Foundries—Equipment and supplies)

BERG, P.P.

"Accuracy in founding"; book review by P.P.Berg. Lit.proizv. no.2:48, 3 of cover F '62. (MIRA 15:2)
(Founding)

BERG, P. P.; GOLUBCHIK, G. K.; PRIPOROVA, G. P.

Using the method of replicas for op5idql microscopes. Lit. proizv. no.10:41 O '62. (MIRA 15:10)

(MICROSCOPY)

BERG, P.P. (SSSR); MEDVEDEV, Ja.I. [Medvedev, Ya.I.] (SSSR)

Gases in castin molds. Slevarenstvi 11 no8/9:305-308
Ag '63.

BERG, P.P., doktor tekhn. nauk; LYASS, A.M., doktor tekhn. nauk, prof., retsenzent; CHERNYAK, O.V., inzh., red.; TIKHANOV, A.Ya., tekhn. red.

[Molding materials] Formovochnye materialy. Moskva, Mashgiz, 1963. 407 p. (MIRA 17:1)

SYSOYEV, V.I.; BERG, P.P., prof., red.; DANILOVA, V.V., red.

[Modern methods of metal machining] Sovremennye metody obrabotki metallov rezaniem. Pod red. P.P.Berga. [n.p.] Rosvuzizdat, 1963. 60 p. (MIRA 17:6)

BERG, P.P.; MIRZOYAN, G.S.

Shrinkage phenomena in thick-walled steel centrifugal castings.
Lit. proizv. no.11:20-21 N '64. (MIRA 18:8)

ACC NR: AP5023267 SOURCE CODE: UR/0128/65/000/008/0039/0040

AUTHOR: Berg, P. P. (Doctor of technical sciences); Glotov, Ye. B. (Engineer); Avdyukhin, V. P. (Engineer)

ORG: none

TITLE: Effect of techniques of the vacuum heating of aluminum alloys on their gas content

SOURCE: Liteynoye proizvodstvo, no. 8, 1965, 39-40

TOPIC TAGS: vacuum melting, aluminum alloy, gas content, hydrogen, metal film, oxide

ABSTRACT: The technological parameters and effectiveness of the vacuum heating of AL4, AL5 and AL9 aluminum alloys were investigated under shop conditions in an industrial vacuum furnace with a capacity of 250 kg (Fig. 1: 1 - vacuum furnace; 2 - manovacuum gauge; 3 - DU-50 vacuum valve; 4 - vacuum-system filter). The furnace is evacuated with VN-1MG type vacuum filter 5; the fall in pressure in the furnace as a function of evacuation time is shown in Fig. 2. Findings: the optimal duration of vacuum heating at 1-4 mm Hg and 720-750°C is 15-20 min. The residual content of hydrogen in the alloys is virtually the same following vacuum heating at 720, 730 and 750°C, but the content of oxides varies; this is attributed to the decrease in the

Card 1/3 UDC: 669.715:533.5

L 9383-66

ACC NR: AP5023267

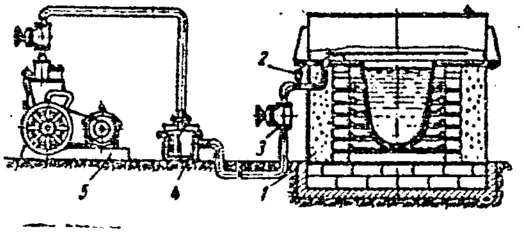


Fig. 1

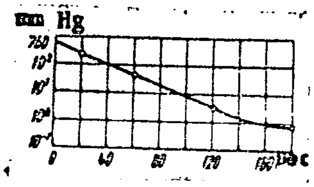


Fig. 2

Card 2/3

ACC NR: AP5023267

0

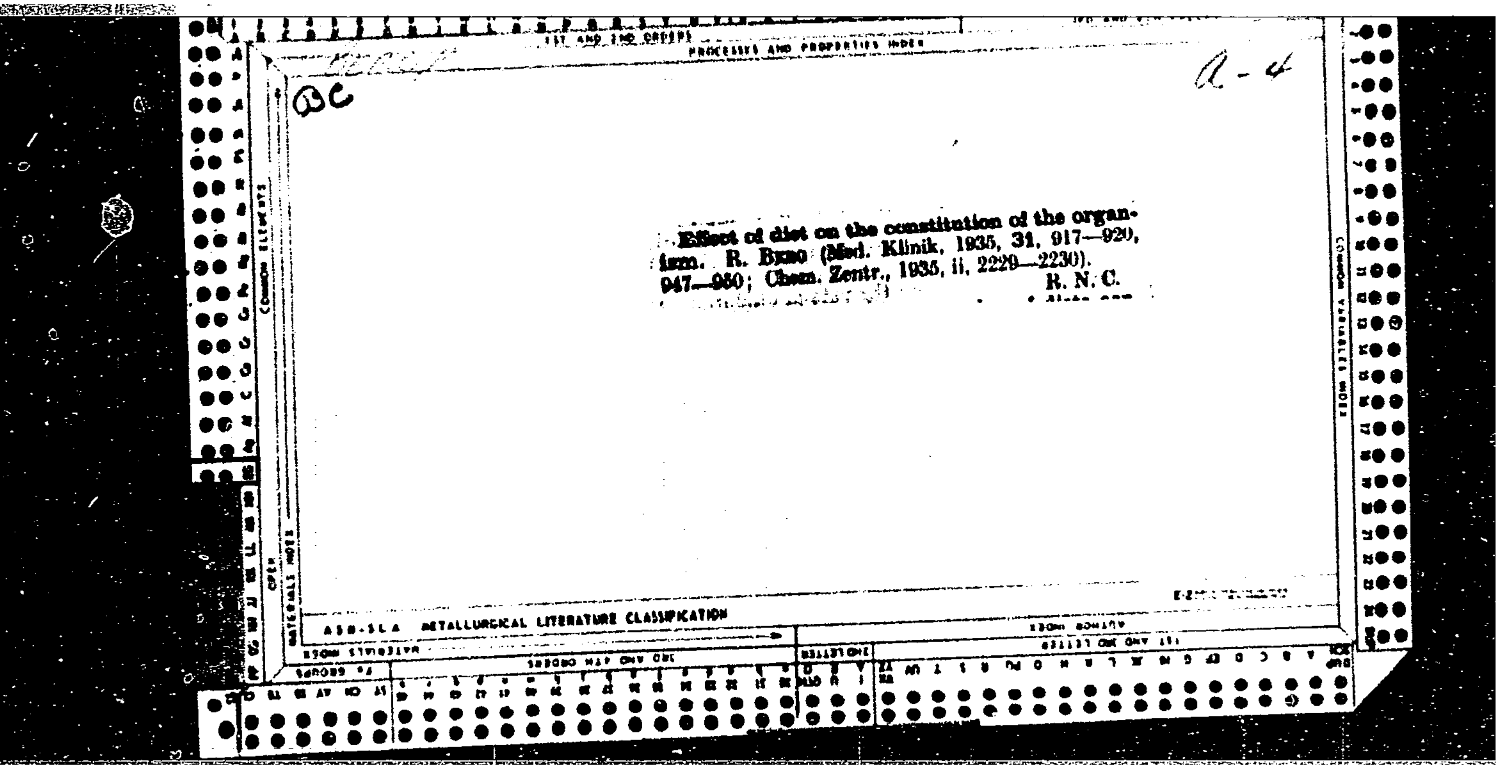
viscosity of Al alloys with increasing temperature and also to differences in the state of the oxide film (increase in its porosity and decrease in its strength with increasing temperature). It was established that a film consisting of aluminum oxide γ-Al_2O_3 loses its plasticity at temperatures above 720°C. It cracks apart and is thus easier separated from the melt by the ascending bubbles. Such film does not impede the segregation, at the surface of the melt, of finer bubbles of hydrogen with nonmetallic occlusions. Further, it was established that the vacuum heating of aluminum alloys at 730-750°C and 1-4 mm Hg for 15-20 min strengthens their subsequent immunity to reabsorption of gases. Alloys treated by this technique, when let stand for 1.5-2.0 hr, absorb hydrogen at the mean rate of 0.03 cm^3/100 g, whereas the Al alloys refined by means of aluminum chloride or vacuum heated at 690-700°C absorb hydrogen at the mean rate of 0.10-0.13 cm^3/100 g. Orig. art. has: 7 figures, 1 table

SUB CODE: 11, 13/ SUBM DATE: none/ ORIG REF: 001/ OTH REF: 000

Card 3/3

BERG, P.P., doktor tekhn. nauk; SEMENOV, P.V., inzh.

Sand fusion on centrifugally made steel castings. Lit. proizv. no.12:31-32 D'65. (MIRA 18:12)


1ST AND 2ND ORDERS
PROCESSES AND PROPERTIES INDEX
ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION
MATERIALS INDEX
AUTHOR INDEX

BC

A-4

Effect of diet on the constitution of the organism. R. Berg (Med. Klinik, 1935, 31, 917—920, 947—950; Chem. Zentr., 1935, ii, 2229—2230).
R. N. C.

BERG, R. L.

"Genetic analysis of two wild populations of drosophila melanogaster," (p. 143) by R. L. Berg, E. B. Brissenden, V. T. Aleksandriskaya, and K. F. Galkovskaya.

SO: Journal of General Biology (Zhurnal Obschei Biologii) Volume II No. 1, 1941.

BERG, R. L.

"Historical Development of the Sex Realization Mechanism" (p. 171) by Berg, R. L.

SO: Journal of General Biology (Zhurnal Obshechey Biologii) Vol. III, No. 3, 1942.

BERG, R. L.

PA 14/49T91

USSR/Medicine - Flies Jul/Aug 48
Medicine - Heredity, Mechanism

"Interrelation Between Mutability and Selectivity in the Natural Population of Drosophila Melanogaster," R. L. Berg, Inst of Zool, Moscow Order of Lenin State U imeni M. V. Lomonosov, 15½ pp

"Zhur Obshch Biol" Vol IX, No 4

Treats subject under: (1) changes in mutability due to selection of mutants. (Tables); (2) fate of yellow mutants in natural population of D. Melanogaster. (Tables); (3) changes in the relation between extent and frequency of occurrence of yellow

[redacted] 14/49T91

USSR/Medicine - Flies (Contd) Jul/Aug 48

mutants. (Tables); (4) discussion of results; (5) resume; and (6) bibliography. Submitted 4 May 47.

[redacted] 14/49T91

KIRPICHNIKOV, V.S.; BERG, R.L.

Carp

"Problems of increasing the resistance to cold of young carp, carp, and their hybrids." Zool. zhur. 31, No. 4, 1952.

Monthly List of Russian Accessions, Library of Congress, October 1952, UNCLASSIFIED

BERG, R.L.

Pavel Grigor'evich Igantov (1874-1902). Vop.geog. 31:164-168 '53.
(MLRA 7:6)

(Ignatov, Pavel Grigor'evich, 1874-1902)

1. BERG, R. L.

2. USSR (600)

4. Ignatov, Pavel Grigor'yevich, 1874-1902.

7. Pavel Grigor'yevich Ignatov, Izv. Vses. geog. ob-va, 85, no. 2, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

BERG, R.

On the islands of the Aral Sea. Vokrug sveta no.6:45-49 Je '54.
(MLRA 7:6)

(Aral Sea--Islands) (Islands--Aral Sea)

BERG, R.

On the islands of the Aral Sea. Vokrug sveta no.7:46-50 Jl '54.
(Aral Sea--Islands) (Islands--Aral Sea) (MLRA 7:8)

9N/5
621.12
.B41

Po Ozeram Sibiri I Sredney Azii (Through the Siberian Lakes and Central Asia) Puteshestviya L. S. Berga (1898-1906 gg) I P. G. IGNATOVA (1898-1902 gg) Moskva, Geografgiz, 1955.
318 P. Illus., Maps., Port.
Bibliographical Footnotes.

BERG, R.L.

Standardization selection in the evolution of a flower. Bot. zhur. 41 no.3:318-334 Mr '56. (MLRA 9:8)

1. Leningradskiy gosudarstvennyy universitet imeni A.A. Zhdanova.
(Plants--Evolution) (Botany--Variation)

BERG, R. L.

"On Some Conditions of the Appearance of Life on the Earth," a paper presented at the International Symposium on the Origin of Life, Moscow, 19-24 Aug 1957.

BERG, R.L.

Colloquium at the "Miassovo" Biological Station (summer 1956).
Vest. LGU 12 no.3:144-149 '57. (MIRA 11:5)
(Biology)

BERG, R.L.

P.G. Ignatov's Teletskoye Expedition of 1901. Trudy Lab. ozeroved. 5:284-294 '57. (MLRA 10:9)

(Teletskoye Lake region)

USSR / General Biology. Evolution. B-6

Abs Jour: Ref Zhur-Biol., No 18, 1958, 81106.

Author : Berg, R. L.
Inst : ~~Not given.~~
Title : Types of Polymorphism.

Orig Pub: Vestn. Leningr. un-ta, 1957, No 21, 115-139.

Abstract: There were investigated different forms of intra-species, so-called unsystematized, polymorphism (P), that the kind that is not bound to be the barriers, which prevent the crossing between different species. The author separated the properties, inherent to all categories of P, and provided a classification for all its different types. The criteria of the classification of P are manifested by the presence or absence of the directional displacement of

Card 1/4

USSR / General Biology. Evolution. B-6

Abs Jour: Ref Zhur-Biol., No 18, 1958, 81106.

Abstract: al correlatives of the forms at the time. The percentage correlation of the forms either remains the same from generation to generation, or oscillates around some constant (for example, sexual diformism, recurring P, heterostylism, etc.). The arrow mechanism, which indicates the difference between the forms within the limits of the balanced P, may be due to external environmental conditions, the interaction of the parts of developing organism, and the genotypical factors, which are split up in each generation. Depending on this, the author isolated three classes of the balanced P: the modifactory, the epigenetic and the genotypical. In the field of the indicated types and classes of P, other smaller subdivisions (categories)

Card 3/4

USSR/General Division, General Questions, Philosophy A-1
Methodology

Abs Jour: Ref Zhur-Biologiia, No 5, 1958, 18805

Author : Berg R. L.

Inst : –

Title : A Seminar on Evolution Problems at the imeni V. L. Komarov Botanical Institute of the Academy of Sciences USSR

Orig Pub: Botan. Zh., 1957, 42, No 7, 1137-1145

Abstract: In the paleobotanic section of the imeni V. L. Komarov Botanical Institute of the Academy of Sciences, in Leningrad there began to work in December, 1956 a seminar on evolution problems, which set as its task the elucidation of the regularity of the evolution of the organic world on the basis of a synthesis of data of various fields of science. Workers of a

Card 1/2

BERG, R.L.

Further research on stabilizing selection in the evolution of the flower [with summary in English]. Bot. zhur. 43 no.1:12-28 Ja '58.
(MIRA 11:2)

1. Leningradskiy gosudarstvennyy universitet im. A.A. Zhdanova.
(Inflorescence)

BERG, R.L.

Conference on the use of mathematical methods in biology. Bot.zhur.
43 no.11:1654-1657 N '58. (MIRA 11:11)

1. Leningradskiy gosudarstvennyy universitet im A.A. Zhdanova.
(Biomathematics)

S/194/62/000/005/018/157
D256/D308

AUTHORS: Berg, R.L., and Timofeyev-Resovskiy, N.V.

TITLE: Ways of genotype evolution

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 5, 1962, abstract 5-2-87 r (Probl. kibernetiki, no. 5, M., Fizmatgiz, 1961, 183-197)

TEXT: The possible mechanism of genotype evolution are considered. The conventional way of gathering the evolution material depends on the mutation changes of the genes, however, the facts in hand of the modern genetics suggest that more substantial changes take place in the structure and in the transformability of the genotype. The known changes of the genotype can be reduced to the following forms: 1) Changes in the number of genes by polyploidy, heteroploidy and secondary fissions; 2) Changes in the number and morphology of chromosomes by genetic and chromosome mutations; 3) Internal differentiation and in certain cases also fusion of genes; creation of specialized groups of genes controlling certain ontogenetic processes; 4) Natural selection and the related changes of the mutabilities. The prob-

Card 1/2

Ways of genotype evolution

S/194/62/000/005/018/157
D256/D308

lem of the genotype evolution is of interest in connection with the developments of the ideas of cybernetics, in terms of which the genotype is considered as a code of inherited information. The results of genotype studies may prove to be helpful in the development of better automatic systems. [Abstractor's note: Complete translation].

Card 2/2

BERG, R.L.

Yellow mutants in the Drosophila melanogaster population of Uman'.
Vest. LGU 16 no.3:77-89 '61. (MIRA 14:2)
(Uman'—Fruit flies) (Zoology—Variation)

BERG., R. L.,

"Synchronous Mutability Changes in Georgraphically Isolated Populations of Drosophila melanogaster."

report submitted for the 11th Intl. Congress of Genetics, The Hague, Netherlands, 2-10 Sep 63

BERG, R.L. (Leningrad)

"Correlational Pleiads of Plants"

Report presented at the 3rd Conference on the use of Mathemetics in Biology, Leningrad University, 23-28 Jan. 1961.
(Primeneniye matematicheskikh Metodov v Biologii. II, Leningrad, 1963 pp 5-11)

BERG, R.L.

Correlation pleiades and stabilizing selection. Prim. mat. metod. v biol. no.3:23-60 '64. (MIRA 17:11)

1. Institut tsitologii i genetiki Sibirskogo otdeleniya AN SSSR, Novosibirsk.

Berg, S.L.

ISAKOV, I.S., prof., admiral flota v otstavke, otv.red.; PETROVSKIY, V.A., dotsent, kand.voyenno-morskikh nauk, kontr-admiral, zamestitel' otv.red-ra [deceased]; DEMIN, L.A., dotsent, kand.geograf.nauk, inzh.-kapitan 1 ranga, glavnyy red.; BERG, S.L., inzh.-mayor, red.; PAVLOVA, O.T., red.; PANIN, I.S., red.; KRONIDOVA, V.A., red.; MARAGINA, A. S., red.; SHIROKOVA, V.S., red.; BOGOLYUBOVA, Ye.D., inzh.-kartograf; BRAILOVSKAYA, Ye.D., inzh.-kartograf; ZININA, Ye.M., inzh.-kartograf; ORLOVA, N.S., inzh.-kartograf; SAVINOVA, G.N., inzh.-kartograf; ALEKSEYEVA, A.V., tekhnik-kartograf; BALAKSHINA, M.M., tekhnik-kartograf; GRIGOR'YEV, A.P., tekhnik-kartograf; DUROVA, T.P. tekhnik-kartograf; MILETINA, M.S., tekhnik-kartograf; SIMAVONOVA, O.B., tekhnik-kartograf; TROPOVA, Z.V., tekhnik-kartograf; SHUMAN, E.E., tekhnik-kartograf; FURAYEVA, Ye.M., tekhn.red.; SVIDERSKAYA, G.V., tekhn.red.; CHERNOGOROVA, L.P., tekhn.red.; SHREYDER, L.Z., tekhn.red.

[Marine atlas] Morskoi atlas. Otv. red. I.S. Isakov. Glav. red. L.A. Demin. Izd. Morskogo general'nogo shtaba. [---Index of geographical names] ---Ukazatel' geograficheskikh nazvanii. 1952. 543 p. (MIRA 12:1)

1. Russia (1923- U.S.S.R.) Voyenno-morskoye ministerstvo.
(Ocean--Maps) (Harbors--Maps)

BERG, S.L., polkovnik; VOROB'YEV, V.I., kapitan pervogo ranga; GIL'BO, G.M., kapitan pervogo ranga; ANANCHENKO, A.A.; BALAKSHINA, M.M.; BANNIKOV, B.S., kapitan vtorogo ranga; BAKHTINA, G.F.; BERENSHTAM, N.V.; BUTYRINA, N.Ya.; VOROB'YEV, V.I., kapitan pervogo ranga; GASS, I.P.; GINDYSH, N.S.; GLADIN, D.F., polkovnik; GOLOVANOVA, L.G., kand. ist. nauk; GOLUBEVA, Z.D., kand. filol. nauk; GONCHAROVA, A.I.; ZANADVOROVA, R.N.; IVANOVA, N.G.; KARAMZIN, G.B.; KOVAL'CHUK, A.S.; KRONIDOVA, V.A.; LITOVA, Ye.I.; MOLCHANOVA, T.I.; OKUN', L.S.; POCHEBUT, A.N.; RAYTSES, V.I.; SAVINOVA, G.N.; SENICHKINA, T.I.; SKRYNNIKOV, R.G., kand. ist. nauk; FURAYEVA, I.I.; CHIZHOVA, N.N.; YASINSKAYA, L.F.; GLADIN, D.F., polkovnik; LAMETSKIY, Ye.F., podpolkovnik; LEBEDEV, S.M., kapitan pervogo ranga; ORDYNSKIY, N.I., kapitan pervogo ranga; NADVODSKIY, V.Ye., podpolkovnik; DEMIN, L.A., inzh.-kontr-admiral, glav. red.; FRUMKIN, N.S., polkovnik, zam. otv. red.; LEVCHENKO, G.I., admiral, red.; BAKHTINA, G.F., tekhn. red.

[Naval atlas] Morskoi atlas. n.p. Izd. Glavnogo Shtaba Voenno-Morskogo Flota. Vol.3. [Naval history] Voenno-istoricheskii. Pt.1. [Text for the maps] Opisaniia k kartam. 1959. xxii, 1942 p. (MIRA 15:5)

1. Russia (1923- U.S.S.R.) Ministerstvo oborony. (Naval history)

BERG, Lev Semenovich, akad.; ANDRIYASHEV, A.P., [translator]; BERG, S.L., [translator]; LEGEZA, M.I., [translator]; LINDBERG, G.U., doktor biolog. nauk, otv. red.; PAVLOVSKIY, Ye.N., akad., red.; GERASIMOV, I.P., akad., red.; MURZAYEV, E.M., red.; GELLER, S.Yu., red.; GRIGOR'YEV, A.A., akad., red.; KALESNIK, S.V., red.; MARKOV, K.K., red.; NIKOL'SKIY, G.V., red.; NIKOL'SKAYA, V.V., red.; OBRUCHEV, D.V., red.; SVETOVIDOV, A.N., red.; STRELKOV, A.A., red.izd-va; SMIRNOVA, A.V., tekhn.red.

[Sekected wirks] Izbrannye trudy. Moskva, Izd-vo Akad.nauk SSSR. Vol.4. [Ichthyology] Ikhtiologiia. 1961. 746 p.
(MIRA 14:5)

1. Chlen-korrespondent AN SSSR (for Kalesnik, Nikol'skiy, Svetovidov)

(Ichthyology)

BERG, T.

Liquid hydrates in aqueous solutions. In English. p. [illegible].

Acta Chimica Vol. 8, no. 4, 1956

SO. EAST EUROPEAN ACCESSIONS LIST Vol. 5, no. [illegible], July 1956

VOL'PERT, G.D.; BERG, T.V. retsenzent; RYABTSEV, V.A., redaktor;
PANOV, B.N., retsenzent.

[Hard-surfacing of equipment parts in the building materials industry with wear-resistant alloys] Naplavka iznosoustoichivymi splavami detalei oborudovaniia promyshlennosti stroitel'nykh materialov. Moskva, Gos. izd-vo lit-ry po stroitel'nym materialam, 1953. 286 p. (MLRA 7:8)
(Hard facing)

Berg, T. V.

AID P - 5608

Subject : USSR/Engineering

Card 1/1 Pub. 107-a - 8/12

Authors : Berg, T. V., Eng. and I. M. Vagapov, Eng.

Title : **L. Ye., Vititlov's method of welding cast iron with steel electrodes.**

Periodical ; Svar. proizv., 12, 23-25, D 1956

Abstract : The authors describe the method proposed by Vititlov (a welder at the Noginsk Machine-Tractor Maintenance Station) of welding rather small cast iron pieces 6 to 20mm thick with steel electrodes covered with chalk; several practical suggestions are also given. Five macro- and micro-pictures and 4 drawings.

Institution : Experimental Welding Plant of the Central Scientific Research Institute of the Ministry of Railways (TsNII MPS).

Submitted : No date

BERG, T. V.

BERG, T.V., inzhener; VAGAPOV, I.M., inzhener.

Welding cast iron with steel electrodes by L.B. Vititlov's method. Svar. proizv. no.12:23-25 D '56. (MLRA 10:9)

1. Opytno-svarochnyy zavod TSentral'nogo nauchno-issledovatel'skogo instituta Ministerstva putey soobshcheniya.
(Cast iron--Welding) (Electrodes)

BERG, T.V.

135-58-6-16/19

AUTHORS: Berg, T.V., Engineer, and Glukhov, I.A., Welding Instructor

TITLE: Cold Welding of Cast Iron in Connection With the Manufacture of Parts (Primeneniye kholodnoy svarki chuguna pri izgotovlenii detaley)

PERIODICAL: Svarochnoye proizvodstvo, 1958, Nr 6, p 44 (USSR)

ABSTRACT: During the past years, the cold welding method was rather extensively used in repair of cast iron parts. An example of producing new cast iron parts - a T-pipe of 600 mm diameter and 18 mm wall thickness for Mospodzemstroy-is shown. Iron-copper electrodes "OZCh-1" of 4 mm diameter were used for the seam. The operations are briefly described, and the sequence of operations are shown in the illustration (Figure 1). There are 2 figures.

ASSOCIATION: Opytnyy svarochnyy zavod Mosgorsovnarkhoza (Experimental Welding Plant of Mosgorsovnarkhoz)

AVAILABLE: Library of Congress

Card 1/1

85473

S/135/60/000/012/010/010
A006/A001

1.5400 also 2708

AUTHORS: Larin, G.N., Berg, T.V., Engineers

TITLE: Welding Materials

PERIODICAL: Svarochnoye proizvodstvo, 1960, No. 12, pp. 38-40

TEXT: The section of welding materials shown in an exhibition includes a great number of new electrode types. The authors list the following types: ОЗЗ-3 (OSZ-3) electrodes with acid-ore coatings; ВН-48-У (VN-48-U) and ИМЭТ-3 (IMET-3) electrodes with fluoro-calcium coatings containing iron powder and ensuring high efficiency of arc welding; electrodes (ЦЛ-6 (TsI-6), ЦЛ-14 (TsL-14) etc) for welding molybdenum, chrome-molybdenum and chrome-molybdenum-vanadium steels operating at 500-610°C; ЦТ-1 (TsT-1), ЦТ-5 (TsT-5) etc types for welding chrome-nickel steels operating at 600-650°C; АЖ 13-15 (AZh13-15) and АЖ13-18 (AZh13-18) electrodes for welding chrome-nickel steel parts; the КТИ-5 (KTI-5) type for welding ЭИ 405 (EI405), ЛАЗ (LAZ) and analogous steels; the ОЗЛ (OZL) type for welding scale-resistant steels operating at 1,000-1,150°C; ОЗЛ-8 (OZL-8) electrodes for welding chrome-nickel "18-8" grade steels; IMET type electrodes coated with a new non-silicate binding material, preventing silicon reduction from the

Card 1/4

85473

S/135/60/000/012/010/010
A006/A001

Welding Materials

slag into the weld metal and thus reducing crystallization cracking; hardfacing electrodes are shown which are intended for the following purposes: Repair of worn out surfaces of parts of mining equipment, excavators, crushing machines etc (the ОЗН (OZN)-type) yielding high wear resistance of the hardfaced parts; for the hardfacing of press tools producing very hard weld metal (ЦН (TsN) type); for the hardfacing of cutting tools [ЦИ (TsI) and ОЗИ (OZI)]; for the hardfacing of the sealing surfaces of fixtures operating at high and superhigh parameters (ЦН (TsN) type). The first type is made on "stellit" cobalt alloy base; the three other electrode types on the base of new chrome-nickel-silicon alloys; electrodes for cold welding of cast iron (the ЦЧ-4 (TsCh-4) type) made of low-carbon Св-08 (Sv-08) wire on a new metallurgical base, ensure high quality of joints and make possible the machining of welds performed on gray iron and high-strength magnesium cast iron when welding cast-iron with steel; electrodes for welding aluminum and its alloys (ОЗА-1 (OZA-1 and 2) are coated with an organic binding base material. The use of the new binding material makes possible the manufacture of electrodes by pressing. The section of fluxes includes ceramic fluxes (КС (KS), K-8, K-11 and M-10) for welding medium-alloy steels, "18-8" grade and low carbon steels. The ФЦК (FTsK) flux can be used for welding alloys and high-alloy steels. It is

Card 2/4

8 5473

Welding Materials

S/135/60/000/012/010/010
A006/A001

produced by sintering chlorine and fluorine salts. The weld metal is alloyed with various metals contained in this flux in the form of powder. Among the equipment for electrode production, the runner-type СБ-1 (SB-1) machine is on view for the mixing of electrode coating materials with water glass, producing 450 kg per hour. A unit for the pressing of electrodes consists of the following parts interconnected in the line: the feed mechanism for the continuous supply of rods to the press head with magnetic rollers making possible an accelerated supply of up to 660 items per minute; the press in whose head the rods are coated; the receiving conveyer delivering the pressed electrodes to the dressing machine equipped with a magnetic device for the regulated packing of the electrodes on the conveyer belt. The unit includes the АЗС-ПБ-2 (AZS-PB-2) briquetting press and can also operate with the ОСЗ-ПО-3 (OSZ-PO-3) press. The efficiency of the unit when pressing 5 mm-diameter-electrodes is 5 tons per shift in the former and 12 tons in the latter case. The concentricity of the electrode coatings with the cores is checked on the КН-Э-1 (KN-E-1) and the КВ-Э-1 (KV-E-1) devices. The КВ-И-1 (KV-I-1) machine serves for the measurement of the thickness and concentricity of the coating on unrusted electrodes with rods of any material. The model of a line is shown for the production of the electrode strip directly from the liquid alloy by the Ulitovskiy-Nikolayenko

19

Card 3/4

85473
S/135/60/000/012/010/010

Welding Materials

method. On this line a 750-1,400 mm long and 0.7-2 mm thick strip can be manufactured from cast-iron, steel, non-ferrous metals and alloys. The strip is intended for the automatic hardfacing of a great variety of parts. The exhibits are provided with detailed descriptions and technological diagrams. Specimens produced with the use of the exhibited fluxes and electrodes are presented. There are 9 figures.

Card 4/4

S/135/61/000/003/009/014
A006/A001

AUTHOR: Berg, T. V., Engineer

TITLE: Manufacturing Electrodes for Welding Aluminum by Pressure Method

PERIODICAL: Svarochnoye proizvodstvo, 1961, No. 3, pp. 27-29

TEXT: Due to the lack of proper binders, electrodes for welding aluminum were until the present manufactured by dipping instead of pressing. Investigations were made at the Moscow Experimental Welding Plant to select new binders and to develop a technology of manufacturing the electrodes by pressure method. A number of materials were tested, from which only the solution of carboxy-methyl cellulose proved suitable. This product is capable of swelling in water and of transforming into a homogeneous colloid solution. It is chemically inert and neither ferments, smells nor coagulates when combined with chlorine and fluorine salts or alkali metals. The density and viscosity of the solution is variable. It was found that a viscosity required to apply the mass on electrode rods by pressure is obtained using 20 - 25% carboxy-methyl cellulose solutions (220 - 250 g dry substance per 1 liter destilled water) by adding 12 - 14% of the solution to the dry charge. Drying of electrodes with coatings containing the new binder can be carried out

Card 1/3

√

S/135/61/000/003/009/014
A006/A001

Manufacturing Electrodes for Welding Aluminum by Pressure Method

directly after pressing at 80°C in conveyer furnaces without pre-curing. When determining the drying conditions, it was found that Al wire and AK wire rods softened at 250°C to such a degree that they bent during clamping in the holder. However, a slight degrease in the rigidity of the rods was admitted, establishing the drying temperature to 225 - 235°C for 2 hours. The admixture of carboxymethyl cellulose binder to the composition of EA-1 coatings somewhat changed the welding properties of the electrodes: the coating was harder to melt and stable burning of the arc was impaired. Therefore the cryolite content was reduced and the amount of potassium chloride correspondingly increased. The possibility was studied of alloying the weld metal with titanium which refines the grains and reduces crack sensitivity when welding long seams. According to data from chemical and metallographical analyses 0.5 - 1% titanium sponge containing 99.6% pure titanium added to the coating assured a titanium amount required in the weld metal. On the basis of investigations performed ОЗА-1 (OZA-1) electrodes were manufactured by pressure from АД1 (AD1) wire for welding pure aluminum, and ОЗА-2 (OZA-2) electrodes from AK wire for welding-up defects in aluminum castings. Tests showed that both types assured stable burning of the arc and normal formation

Card 2/3